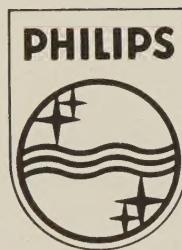


PHILIPS TECHNICAL REVIEW



VOLUME 21
1959/60

P H I L I P S T E C H N I C A L R E V I E W

A publication of the Research Laboratories of N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. Twelve issues per year and an average of 32 pages per issue. The Review is published in four editions: English, Dutch, French and German, all identical in contents.

Editors

S. Gradstein, Editor-in-chief
D. M. Duinker, Deputy editor
M. Beun
D. van Dalen
K. R. Fröhner (German edition)
C. M. Hargreaves (English edition)
J. W. Miltenburg

All rights reserved by N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. Articles may be reproduced in whole or in part, provided that the editors are first notified and that the source "Philips Technical Review" is mentioned in full. Photographs and drawings for this purpose are available on request.

CONTENTS

VOLUME 21, 1959/60

LIGHT

Motion-picture projection with a pulsed light source, by P. Hoekstra and C. Meyer	73	A simple circuit for a light source of constant intensity, by H. van Suchtelen	229
A motion-picture projector of simplified design, by J. J. Kotte	83	Temperatures in fittings for incandescent lamps, by L. J. H. Exalto	300
Stray capacitances in neon installations, by J. J. Wilting	207	Automatic control of a filament-coiling machine with the aid of preset counters, by F. Einramhof and P. Havas	309

TELECOMMUNICATIONS

A range of pulsed magnetrons for centimetre and millimetre waves, by J. Verweel and G. H. Plantinga	1	An 8 mm high-resolution radar installation, by J. M. G. Seppen and J. Verstraten	92
A wide-band triode amplifier with an output of 10 W at 4000 Mc/s, by J. P. M. Gieles and G. Andrieux	41	A metal-ceramic disc-seal triode for frequencies up to 6000 Mc/s, by E. Mentzel and H. Stietzel	104
Experiments in the field of parametric amplification, by B. Bollée and G. de Vries	47	An experimental disc-seal triode for 6000 Mc/s, by M. T. Vlaardingerbroek	167
A slotted lecher line for impedance measurements in the metric and decimetric wave bands, by G. Schiefer	88	Reflex klystrons for wavelengths of 4 and 2.5 mm, by B. B. van Iperen	221
		Flying-spot scanners for colour television, by H. van Ginkel	234

SOUND

Modern acoustical engineering, II. Electro-acoustical installations in large theatres, by D. Kleis	52	An acoustic spectrum analyser with electronic scanning, by D. J. H. Admiraal	349
		Performance tests on loudspeakers, by M. T. Haitjema, W. Kopinga and S. J. Porte	362

X-RAYS AND NUCLEAR PHYSICS

Instrumentation for a subcritical homogeneous suspension reactor,		III B. The monitoring of high neutron flux with the aid of an electrometer, by M. van Tol	144
I. Reasons behind the choice of a homogeneous suspension reactor, by J. J. Went	109	IV. The safety circuits, by F. J. Schijff	148
II. Measurement and control of operating parameters, by B. L. A. van der Schee and M. van Tol	121	The orientation of diamonds for tools by means of an X-ray image intensifier, by J. F. H. Custers and A. J. van der Wagt	178
III A. The monitoring of low neutron flux by means of fast pulse-counting channels, by J. J. van Zolingen	134	A transistorized radiation monitor, by M. van Tol and F. Bregman	201
		X-ray inspection of hot steel billets during rolling, by W. J. Oosterkamp, J. Proper and M. C. Teves	281

MEASURING EQUIPMENT

The resistance network, a simple and accurate aid to the solution of potential problems, by J. C. Francken	10	An automatic dew-point hygrometer using Peltier cooling, by P. Gerthsen, J. A. A. Gilsing and M. van Tol	196
A slotted lecher line for impedance measurements in the metric and decimetric wave bands, by G. Schiefer	88	A transistorized radiation monitor, by M. van Tol and F. Bregman	201
Instrumentation for a subcritical homogeneous suspension reactor,		A gas-discharge indicator tube for transistorized decade counting circuits, by T. P. J. Botden	267
II. Measurement and control of operating parameters, by B. L. A. van der Schee and M. van Tol	121	A transistor cardiotachometer for continuous measurements on working persons, by G. A. Harten and A. K. Koronai	304
III A. The monitoring of low neutron flux by means of fast pulse-counting channels, by J. J. van Zolingen	134	A simple method of determining the thermal conductivity of solids, by J. Schröder	357
III B. The monitoring of high neutron flux with the aid of an electrometer, by M. van Tol	144	Performance tests on loudspeakers, by M. T. Haitjema, W. Kopringa and S. J. Porte	362

MATERIALS AND THEIR RESEARCH

Segregation and distribution of impurities in the preparation of germanium and silicon, by J. Goorissen	185	The fruits and foundations of solid-state research, by D. Polder	334
X-ray inspection of hot steel billets during rolling, by W. J. Oosterkamp, J. roPper and M. C. Teves	281	A method of growing dislocation-free germanium crystals, by B. Okkerse	340
Nuclear magnetic resonance, by D. J. Kroon .	286	A simple method of determining the thermal conductivity of solids, by J. Schröder	357

MISCELLANEOUS

Vector-electrocardiography, by G. C. E. Burger and G. Klein	24	A gas-discharge indicator tube for transistorized decade counting circuits, by T. P. J. Botden	267
The use of radioactive isotopes for the study of littoral drift, by J. J. Arlman, J. N. Svásek and B. Verkerk	157	Experiments with radioactive preparations of the acaricide "Tedion V 18", by J. Halberstadt	276
Metal vacuum equipment, by N. Warmoltz and E. Bouwmeester	173	Nuclear magnetic resonance, by D. J. Kroon	286
The orientation of diamonds for tools by means of an X-ray image intensifier, by J. F. H. Custers and A. J. van der Wagt	178	Automatic control of a filament-coiling machine with the aid of preset counters, by F. Einramhof and P. Havas	309
An automatic particle counter and sizer, by H. A. Dell, D. S. Hobbs and M. S. Richards	253	A 75 cm receiver for radio astronomy and some observational results, by C. L. Seeger, F. L. H. M. Stumpers and N. van Hurck	317